

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/29/09 has been entered.

2. This office action is in response to correspondence filed 10/29/09 regarding application 10/550967, in which claims 1, 2, and 7 were amended. Claims 1-17 are pending in the application and have been considered.

Response to Arguments

3. The arguments on pages 6-9 of the Remarks have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2626

5. Claims 1-8, 13, 14, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mishelevich et al. (WO 01/31634) in view of Lewis et al. (6,314,397).

Consider claim 1, Mishelevich discloses a speech recognition and correction system **(p1, lines 6-8)** comprising:

at least one speech recognition device **(p6, lines 14-20, Fig 4 Processor includes SR Engine and SR Interface)** configured to transcribe a spoken text into a recognized text, and

a correction device **(p15 lines 12-31, Fig 10 proofreading device)** configured to correct the recognized text, said correction device being connected to the at least one speech recognition device via a data network **(p13 lines 4-8 the Internet)** for the transmission of the recognized text and/or of the spoken text, wherein the correction device comprises a lexicon of alternatives **(p15 lines 21-22, list box 1012)**, the lexicon of alternatives comprising a plurality of entries, at least some of which are displayed **(p15 lines 25-26, words are shown on the interface)** by the correction device as a list of alternatives to individual words **(Fig 10)** of the recognized text.

Mishelevich does not specifically mention wherein the list of alternatives for at least some of the plurality of entries in the lexicon of alternatives displayed for a particular individual word is updated based on information about at least one previous correction made by the correction device for the particular individual word.

Lewis discloses a list of alternatives for at least some of a plurality of entries in a lexicon of alternatives displayed for a particular individual word is updated based on

Art Unit: 2626

information about at least one previous correction made by a correction device for the particular individual word **(Col 6 lines 16-24)**.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Mishelevich such that the list of alternatives for at least some of the plurality of entries in the lexicon of alternatives displayed for a particular individual word is updated based on information about at least one previous correction made by the correction device for the particular individual word, in order to improve word correction efficiency, as suggested by Lewis **(Col 1 lines 63-67)**.

Regarding independent claim 2, it is directed to the correction device of independent claim 1, and is rejected for the same reasons as claim 1.

Consider claim 7, Mishelevich discloses a computer implemented method of creating an entry in a lexicon of alternatives **(Fig 11, p16 lines 1-9)** used to correct recognized text transcribed from a spoken text by a speech recognition device, the method comprising examining at least one source of knowledge **(p 16 lines 2-9, Data is input, categorized voice recognition segments)** that is independent of the speech recognition device with respect to text elements, **(p16 lines 2-9, data is categorized according to text elements)** including words that can be confused with one another **(p16 lines 1-2)**, and including the text elements that can be confused with one another as a list of alternatives in the entry of the list of alternatives **(p16 lines 1-2, p15 lines 21-22)**, the confusable text elements are put together in a list (a data record entry) of

Art Unit: 2626

alternatives).

Mishelevich does not specifically mention wherein the list of alternatives in the entry is updated based at least in part on at least one previous correction of the recognized text.

Lewis discloses a list of alternatives in the entry is updated based at least in part on at least one previous correction of a recognized text (**Col 6 lines 16-24**).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Mishelevich such that the list of alternatives in the entry is updated based at least in part on at least one previous correction of the recognized text for reasons similar to those of claim 1.

Consider claim 3, Mishelevich discloses an analyzer configured to analyze (**Fig 4, Text Processor 424** is an analyzer since it processes text) selected text passages of the recognized text, by using character chain comparison (**Fig 9, step 910**) or syntactic analysis, and to determine alternatives to the selected text passages from the lexicon of alternatives (**Fig 9, step 910**).

Regarding claim 4, Mishelevich discloses that the analyzer can be activated by a user of the correction device (**p14 lines 20-23**, the system is operated by a proofreader).

With respect to claim 5, Mishelevich further discloses the analyzer determines

Art Unit: 2626

selected text passages from a cursor position or a marking information of a text processing program (**p14, lines 4-6**).

Consider claim 6, Mishelevich discloses the analyzer determines selected text passages from a time position of the spoken text and its association with the recognized text (**p13 lines 20-24**).

Regarding claim 8, Mishelevich discloses determining text element replacements (**p15 lines 25-28**) made in a corrected text with respect to the original recognized text transcribed by the speech recognition device and recording the text element replacements as alternatives (**p16 lines 7-9**, the categorized voice-recognition segments contain the text element replacements and are stored, or recorded as alternatives) in the lexicon of alternatives (**p15 lines 21-22** the list is a series of data record entries).

Consider claims 13 and 14, Mishelevich discloses subdividing the plurality of entries according to speech, and according to technical field (**p16 lines 1-9**, the words are categorized into categories representing spoken sections during a medical procedure, which are technical fields).

Consider claim 17, Mishelevich discloses the at least one source of knowledge that is independent of the speech recognition device includes at least text files specific

to the field of application (**Fig 12**).

6. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mishelevich et al. (WO 01/31634) in view of in view of Lewis et al. (6,314,397), in further view of Ortega et al. (6,507,816).

Regarding claims 9 and 10, Mishelevich discloses the feedback of each text element replacement is returned (**p15 lines 7-8**) and the retraining of the speech recognition software is carried out (**p15 lines 7-8**). Mishelevich also discloses the speech recognition software causes alternatives to words to be displayed (**p14 lines 11-13**), and recording entries in the lexicon of alternatives (**p16 lines 7-9**, the categorized voice-recognition segments contain the text element replacements and are stored, or recorded as alternatives) thus suggesting, but not specifically teaching, that frequent element replacements are recorded as alternatives.

Mishelevich and Lewis do not specifically evaluating a frequency of each text element replacement examined in at least one source of knowledge, and recording the text element replacements as alternatives in the lexicon of alternatives only when a predetermined lower limit value of the frequency, expressed by an absolute number of the text element replacements or the number of the text element replacements with respect to the overall number of text elements examined or with respect to an overall occurrence of a given text element, is exceeded, or a predetermined upper limit is not reached.

Art Unit: 2626

Ortega discloses evaluating a frequency of each text element replacement examined in at least one source of knowledge (**Col 4 lines 30-41**, the user selects a text string to replace an incorrect one, **Col 4 lines 44-47** the number of times (frequency) the corrected word (or text element replacement) is used is counted) and the use of a problem solving application to provide suggestions to the speaker (**Col 5 lines 20-22**) is only carried out when a predetermined lower limit value of the frequency, (**Col 5 lines 24-29**, the calculated accuracy ratio is equivalent to the inverse of the number of replacements ratio, therefore the acceptable minimum taught in line 24 is equivalent to a predetermined lower limit on replacements ratio exceeded) expressed by the absolute number of replacements or the ratio of replacements with respect to the overall number of words examined or with respect to the overall occurrence of a given word, is exceeded, and only when a predetermined upper limit value of the frequency, expressed by an absolute number of the text element replacements or a ratio of a number of the text element replacements with respect to an overall number of text elements examined, is not reached (**Col 5 lines 17-20**, e.g. when 100% is not reached).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Mishelevich and Lewis by using the replacement frequency evaluations are taught by Ortega to determine when to add a word to the lexicon, in order to solve misrecognition problems as suggested by Ortega (**Col 2 lines 10-15**).

7. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Art Unit: 2626

Mishelevich et al. (WO 01/31634) in view of Lewis et al. (6,314,397), in further view of Nassif et al. (6,418,410).

Consider claim 11, Mishelevich discloses the text element replacements **(p15 lines 25-28)** made in a corrected text with respect to the original recognized text transcribed by a speech recognition device are determined and recorded as alternatives **(p16 lines 7-9** the categorized voice-recognition segments contain the text element replacements and are stored, or recorded as alternatives**)** in data record entries of the lexicon of alternatives. **(p15 lines 21-22** the list is a series of data record entries**)**

Mishelevich and Lewis do not specifically disclose analyzing the acoustic similarity of text elements and recording the text element replacements as alternatives in the lexicon of alternatives only when the text element replacements have a predetermined measure of phonetic similarity.

Nassif discloses analyzing the acoustic similarity of text elements **(Col 7 lines 2-5,** the audio of the text elements is compared**)** and the updating the language model **(Col 6 lines 45-50)** only when text elements have a predetermined measure of phonetic similarity **(Col 6 lines 51-58,** the method compares whether a predetermined statistical quality exists by comparing the phonetics**)**.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Mishelevich and Lewis by analyzing the acoustic similarity of text elements and recording the text element replacements as alternatives in the lexicon of alternatives only when the text element replacements have a predetermined measure of phonetic similarity, in order to continually improve accuracy,

Art Unit: 2626

as suggested by Nassif (**Col 1 lines 32-37**).

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mishelevich et al. (WO 01/31634) in view of Lewis et al. (6,314,397), in further view of Chen et al. (5,864,805).

Regarding claim 12, Mishelevich discloses that the text element replacements (**p15 lines 25-28**) made in a corrected text with respect to the original recognized text transcribed by a speech recognition device are determined and recorded as alternatives (**p16 lines 7-9**, the categorized voice-recognition segments contain the text element replacements and are stored, or recorded as alternatives) in data record entries of the lexicon of alternatives (**p15 lines 21-22** the list is a series of data record entries).

Mishelevich and Lewis do not specifically mention analyzing time positions of the text element replacements with respect to the spoken text and recording the text element replacements as alternatives in the lexicon of alternatives only when there is a corresponding text element in the spoken text that is similar in terms of time.

Chen discloses analyzing time positions of text elements with respect to spoken text (**Col 3 lines 11-20**, the start and end times of the word) and a candidate words list is derived only when there is a corresponding text element in the spoken text that is similar in terms of time (**Col 3 lines 21-23**, **Col 3 lines 32-39**). Chen also teaches replaced text elements are chosen from the list of alternative words (**Col 4 lines 40-46**).

Art Unit: 2626

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Mishelevich and Lewis analyzing time positions of the text element replacements with respect to the spoken text and recording the text element replacements as alternatives in the lexicon of alternatives only when there is a corresponding text element in the spoken text that is similar in terms of time., in order to fix word boundaries problems as mentioned by Chen (**Col 1, lines 44-46**).

9. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mishelevich et al. (WO 01/31634) in view of Lewis et al. (6,314,397), in further view of Ortega et al. (6,332,122).

Regarding claim 15, Mishelevich discloses identifying the person recording the data and, in the physician example, this can be either the physician or another medical staff member such as a nurse (**p8 lines 29-30**).

Mishelevich and Lewis do not specifically subdividing the plurality of entries according to author of the original spoken or corrected text.

Ortega discloses subdividing data record entries according to author of the original spoken or corrected text (**Abstract**, which transcribed text is associated with a speaker using a speaker ID).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Mishelevich and Lewis by subdividing the plurality of entries according to author of the original spoken or corrected text, in order to overcome

Art Unit: 2626

difficulties in identifying multiple users, as suggested by Ortega (**Col 1 lines 19-26**).

10. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mishelevich et al. (WO 01/31634) in view of Lewis et al. (6,314,397), in further view of Rozak (5,950,160).

Consider claim 16, Mishelevich discloses the feedback from the proofreader in the form of the selection of particular options of text are used for training the speech recognition software, which generates the list of alternatives (**p15 lines 7-11**) , but Mishelevich and Lewis do not specifically teach that the list of alternatives is adapted online during the correction of recognized texts.

Rozak specifically teaches the list of alternatives is adapted online during the correction of recognized texts (**Col 5 lines 54-65**, the vocabulary, which overlaps the list of alternatives, has words added during correction, which makes it online).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Mishelevich and Lewis to adapt the list of alternatives during correction as taught by Rozak, in order to improve efficiency, as suggested by Rozak (**Col 1 lines 20-22**).

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jesse Pullias whose telephone number is 571/270-5135. The examiner can normally be reached on M-F 9:00 AM - 4:30 PM. If

Art Unit: 2626

attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 571/272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571/270-6135.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Jesse S. Pullias/
Examiner, Art Unit 2626

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Primary Examiner, Art Unit 2626

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